

Application Number 09/742,625
Responsive to Office Action mailed April 23, 2007

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REMARKS

Prior to the filing of this response, claims 37-39, 50-52 and 67-70 were pending in the application.

In this response, claim 37 is amended to clarify that the primer coating composition is formaldehyde-free. This amendment is supported in the specification, for example, in col. 2, lines 43-45 of issued parent U.S. Patent No. 6,165,308.

New claim 71 is added, which includes the subject matter of claims 37 and 50. Claim 50 is cancelled without prejudice or disclaimer.

In view of the above amendments and the following remarks, Applicants respectfully request further examination of the application and reconsideration of the rejections set forth in the Office Action dated April 23, 2007.

I. Claim Objection

Claim 50 stands objected to as being in improper dependent form for failing to further limit the subject matter of a previous claim.

In response, claim 50 is cancelled and new claim 71 is added. New claim 71 includes the subject matter of claims 37 and 50.

Withdrawal of the objection is respectfully requested.

II. Claim Rejection Under 35 U.S.C. § 103

A. Paragraph 8

In paragraph 8 of the Office Action, claims 37-39, 50-52, and 67-70 are rejected under 35 U.S.C. 103(a) as obvious over DE 2224732 in view of Cummings (US 3,529,993), further in view of Helmer et al. (WO 9622338). Applicant respectfully traverses the rejection to the extent such rejections may be considered applicable to the claims as amended. The applied references fail to disclose or suggest the inventions defined by Applicant's claims, and provide no teaching that would have suggested the desirability of modification to arrive at the claimed invention.

The presently claimed invention provides a cost efficient manufacturing process for making polymer coated (primed) composite substrates directly from the press without any extra

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latex processing or heating/drying steps.¹ In the presently claimed embodiment of this process a primer coating composition is applied on a compressible mat and rapidly forms a crosslinked matrix. A topcoat composition is applied over the primer coating composition, and this construction is compressed and heated to form a polymer coated composite substrate.

As pointed out in col. 4 of the issued parent application, U.S. Patent No. 6,165,608, the primer coating composition applied to the mat was originally described in the Helmer reference. In Helmer, the composition was utilized as a rapidly hardening traffic paint.

The present invention is based in part on the recognition that the rapidly crosslinking compounds originally described in Helmer would be particularly well suited for use in manufacturing polymer coated composites using cellulosic fibers or particles, and/or wood chips or flakes. The rapid crosslinking eliminates the heating and drying steps required in previous processes, and the compositions are free of formaldehyde,² which is difficult to use in a manufacturing environment and is unacceptable to some customers because it is not environmentally friendly.

The Helmer reference fails to teach or suggest that his formaldehyde-free, rapid crosslinking composition could be useful as a primer for cellulosic or wood composites, or would be compatible with other components used in the manufacture of such composites, such as the presently claimed topcoat composition.

The present obviousness rejection is stated as follows:

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have used a fast hardening aqueous coating composition of Helmer as amino resin in DE 2224732 in view of Cummings with the expectation of providing the desired fast cured hard, smear resistant layer since Helmer et al teach that their fast hardening aqueous coating composition is suitable in applications where it is desirable to form a hard, smear-resistant, non-tracking surface very quickly after deposit of the coating under ambient conditions, *in particular*, as a fast hardening aqueous traffic marking paint.³

In view of the above, the rejection is initially based on the contention that it would have been obvious to a skilled artisan to replace the aminoplast resin in DE '732 with the composition

¹ U.S. Patent No. 6,165,308 at col. 2, lines 36-40.

² *Id.*, at col. 2, lines 43-57.

³ Office Action, page 5, first full paragraph (emphasis in original).

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in Helmer. A ground for this rejection appears to be that this is a simple process of replacing one "amino resin" for another. However, the present claim 37 requires a very specific composition be used as the primer, and this composition is completely different from the aminoplast resin utilized in DE '732. As noted on page 2 of the translation, DE '732 defines aminoplast resins as urea, thiourea and melamine formaldehyde resins. This is consistent with the recognized definition of aminoplast or amino resins, which are made by a reaction of an amine with an aldehyde (formaldehyde).⁴ In contrast, the present claim 37 requires that the primer composition be formaldehyde free, and the plain language of the claim makes clear that the primer composition is not an amino resin as such term is used in the art. Therefore, Applicants respectfully submit that the compounds would not be readily substitutable as assumed in the obviousness rejection.

Second, the present claim requires that the primer coating composition be overlain with a topcoat composition and then heated in a press to form a polymer coated composite. The fact that the presently claimed primer is compatible with these process steps is not discernable from the Helmer reference, which teaches that the composition be applied under ambient conditions as a traffic marking paint. There is no teaching in Helmer that would suggest to one of ordinary skill that his traffic marking paint could be successfully overcoated with a topcoat and heated in a press as required in the process described in DE '732.

Third, the process in DE '732 requires that the primer coat composition be heated and dried prior to application of the topcoat. There is no teaching in DE '732 that would have suggested to a skilled artisan to eliminate the primer drying step by using a rapidly crosslinkable non-aminoplast composition as presently claimed. There is also no teaching that elimination of this step would have a reasonable expectation of success in forming an impregnated substrate that could be further coated and heated to form a polymer coated composite.

The Cummings reference describes a primer composition that may be used on wood substrates. The composition in Cummings is the reaction product of a polyanhydride and an amine, which the Examiner refers to as an "amino resin." As pointed out above, the presently claimed primer is not an amino resin, and the composition used in Cummings is completely different from the specific primer composition set forth in the present claims (and the primer

⁴ See, e.g., *Hawley's Condensed Chemical Dictionary*, 13th ed. (1997).

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composition described in DE '732, which is the reaction product of an amine and formaldehyde). Since the compounds are very different, knowledge of the compositions in Cummings would not provide the skilled artisan with any incentive to: (1) utilize the compounds in Helmer as a primer coating in a process for making a polymer coated article; or (2) to eliminate the drying step in the process described in DE '732.

The amino compounds used in DE '732 and Cummings are very different from the compounds described in Helmer. One of ordinary skill in the art would have no incentive to modify the process in DE '732 to replace the amino compounds with the compounds in Helmer, and such a modification would not have a reasonable expectation of success. Further, in view of the teachings in DE '732, a skilled artisan would have no incentive to eliminate the drying step in his process. Such an incentive is not supplied by Cummings, which does not even utilize an amino resin.

To establish a *prima facie* case of obviousness, there must be some reason, suggestion or motivation found in the prior art whereby a person of ordinary skill in the field of the invention would make the proposed combination. That knowledge cannot come from the applicant's invention itself.⁵ The present obviousness rejection is based on hindsight following review of the present disclosure, and is improper. Applicants respectfully submit that the process presently claimed in claims 37-39, 51-52 and 67-71 is not obvious under 35 U.S.C. § 103(a) over DE '732 in view of Cummings and Helmer. Reconsideration and withdrawal of the rejection are respectfully requested.

B. Paragraph 9

In paragraph 9 of the Office Action, claims 38-39 and 50 are rejected under 35 U.S.C. 103(a) as obvious over DE '732 in view of Cummings, further in view of Helmer, and further in view of van der Hoeven (US 4,789,604). Applicant respectfully traverses the rejection to the extent such rejections may be considered applicable to the claims as amended. The applied references fail to disclose or suggest the inventions defined by Applicant's claims, and provide no teaching that would have suggested the desirability of modification to arrive at the claimed invention.

⁵ See, e.g. *In re Oetiker*, 24 USPQ2d 1443 (Fed. Cir. 1992).

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As pointed out in Section II(A) above, the amino compounds used in DE '732 and Cummings are very different from the compounds described in Helmer. One of ordinary skill in the art would have no incentive to modify the process in DE '732 to replace the amino compounds with the compounds in Helmer, and such a modification would not have a reasonable expectation of success. Further, in view of the teachings in DE '732, a skilled artisan would have no incentive to eliminate the drying step. Such an incentive is not supplied by Cummings, which does not utilize an amino resin.

These deficiencies are not remedied by the van der Hoeven reference, which would further fail to provide one of ordinary skill in the art to make the modification to the DE '732 process proposed by the Examiner. For at least this reason, the present obviousness rejection is based on hindsight following review of the present disclosure, and is improper. Applicants respectfully submit that the process presently claimed in claims 38-39 is not obvious under 35 U.S.C. § 103(a) over DE '732 in view of Cummings, Helmer and van der Hoeven. Reconsideration and withdrawal of the rejection are respectfully requested.

CONCLUSION

All claims in this application are in condition for allowance. Applicant respectfully requests reconsideration and prompt allowance of all pending claims.

Please charge any additional fees or credit any overpayment to deposit account number 50-1778.


If questions remain regarding the above, or if the Examiner wishes to discuss any aspect of the present application, please contact the undersigned.

Date:

July 23, 2007

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